

IN THE CLAIMS:

1. (Currently Amended) A broadcasting apparatus that broadcasts a specific program to which a reproduction time period between a starting time and a finishing time is specified, the reproduction being performed by a receiving apparatus, the broadcasting apparatus comprising:

5 allotment unit operable to allot a broadcasting bandwidth for the reproduction time period to the specific program and allotting a part of the broadcasting bandwidth for a preceding time period immediately before the reproduction time period to the specific program and the other part of the broadcasting bandwidth to another program, so that the part of the broadcasting bandwidth for the preceding time period allotted to the specific program is
10 narrower than the other part of the broadcasting bandwidth allotted to another program, the preceding time period being longer than a time period that is necessary for transmitting a program data of the specific program more than once during the part of the broadcasting bandwidth for the preceding time period allotted to the specific program;

script generation unit operable to generate (a) when the receiving apparatus
15 receives an event message for instructing storage, a script for storing program data of the specific program in a storage unit of the receiving apparatus, and (b) when the receiving apparatus receives an event message for instructing reproduction, a script for the receiving apparatus to reproduce the program data of the specific program in a case where the program data of the specific program has been stored in the storage unit, each script being automatically stored when
20 the receiving apparatus receives the script;

an event message generation unit operable to generate the event message for instructing storage and the event message for instructing reproduction;

transmission unit operable to transmit a normal program that includes a video stream and an audio stream, and further in accordance with the result of allotment by the
25 allotment unit, repeatedly multiplex program data of the other program with the normal program based on a data carousel transmission method and transmit a first multiplexed result while multiplexing the program data of the specific program and the script with the normal program and transmitting a second multiplexed result in the preceding time period, and repeatedly multiplex the program data of the specific program and the script with the normal program and
30 transmit the second multiplexed result in the reproduction time period; and

control unit operable to control the transmission unit to transmit event message for instructing storage in the preceding time period and to transmit the event message for instructing reproduction at the starting time,

wherein the specific program has the program data that relates to a commercial
35 message which is inserted in the normal program, and

the reproduction time period of the specific program is the same as a broadcast time period of the commercial message.

2. - 3. (Cancelled)

4. (Previously Presented) The broadcasting apparatus of Claim 1, further comprising:

a storage unit for storing as the program data of the specific program (a) first contents data that makes up the specific program and (b) second contents data that is different
5 from the first contents data in part,

wherein the transmission unit transmits the first contents data in the preceding time period and transmits the second contents data in the reproduction time period of the specific program.

5-8. (Cancelled)

9. (Currently Amended) A broadcasting apparatus that transmits a data broadcasting program and a first and a second specific programs which are inserted in the data broadcasting program, a total time period between a starting time and a finishing time for broadcasting the data broadcasting program including a first time period during which the first specific program is
5 broadcast and a second time period during which the second specific program is broadcast, the broadcasting apparatus comprising:

allotment unit operable to

(a) allot a part of the broadcasting bandwidth to the first and the second specific programs and the other part of the broadcasting bandwidth to the data broadcasting
10 program for all of the time periods other than the first and the second time periods in the total time-period, so that the part of the broadcasting bandwidth allotted to the first and the second specific programs for all time periods other than the first and the second time periods is narrower than the other part of the broadcasting bandwidth allotted to the data broadcasting program for all time periods other than the first and the second time periods, all of the time periods other than
15 the first and the second time periods being longer than the time period necessary for transmitting a program data of the first specific program and a program data of the second specific program more than once during the part of the broadcasting bandwidth allotted to the first and the second specific programs for all time periods other than the first and the second time periods, and

(b) allot a part of the broadcasting bandwidth to the first specific program and
20 the other part of the broadcasting bandwidth to the second specific program for the first and the
second time periods;

script instruction generation unit operable to (i) generate (a) when a receiving
apparatus receives a first event message for instructing storage, a script for storing program data
of the first specific program in a storage unit of the receiving apparatus and (b) when the
25 receiving apparatus receives a second event message for instructing storage, a script for storing
program data of the second specific program in the storage unit and (ii) generate (a) when
receiving a first event message for instructing reproduction, a script instructing the receiving
apparatus to reproduce the program data of the first specific program in a case that the program
data of the first specific program has been stored in the storage unit and (b) when receiving a
30 second event message for instructing reproduction, a script for the receiving apparatus to
reproduce the program data of the second specific program in a case that the program data of the
second specific program has been stored in the storage unit, each script being automatically
stored when the receiving apparatus receives the script;

an event message generation unit operable to generate the plurality of event
35 messages for instructing storage and the plurality of event messages for instructing reproduction;

transmission unit operable to transmit a normal program that includes a video
stream and an audio stream, and

(a) repeatedly transmit the scripts during the total time period, and

(b) in accordance with the result of allotment by the allotment unit,

40 (i) repeatedly multiplex the program data of the data broadcasting
program during all of time periods other than the first and the second time periods in the total
time period, and

(ii) repeatedly multiplex the program data of each of the first and the second specific programs during the total time period; and

45 control unit operable to control the transmission unit so as to transmit (a) the first event message for instructing storage before the first time period (b) the first event message for instructing reproduction at the starting time of the first time period (c) the second event message for instructing storage before the second time period, and (d) the second event message for instructing reproduction at the starting time of the second time period,

50 wherein in accordance with the result of allotment by the allotment unit, repeatedly multiplex program data of the first and second specific program with the normal program based on a data carousel transmission method and transmit a first multiplexed result while multiplexing the program data of the first and second specific programs and the script with the normal program and transmitting a second multiplexed result in the preceding time period,
55 and repeatedly multiplex the program data of the specific first and second programs and the script with the normal program and transmit the second multiplexed result in the reproduction time period,

the first specific program and the second specific program respectively have the program data that relates to a first commercial program and a second commercial program which
60 are inserted in the normal program, and

the first time period and the second time period respectively are the same as broadcast time periods of the first commercial program and the second commercial program.

10. (Cancelled)

11. (Previously Presented) The broadcasting apparatus of Claim 9, further comprising:

storage unit operable to store as the program data of the first specific program (a) first contents data that makes up the first specific program and (b) second contents data that is
5 different from the first contents data in part,

wherein the transmission unit transmits the first contents data in a time period other than the first time period in the total time period, and transmits the second contents data in the first time period.

12. (Currently Amended) A broadcasting apparatus that transmits a data broadcasting program and a first and a second specific programs which are inserted in the data broadcasting program, the broadcasting apparatus comprising:

allotment unit operable to

5 (a) allot a broadcasting bandwidth for a first time period and a second time period to the first specific program and the second specific program, the first time period and the second time period are included in a total time period between a starting time and a finishing time for broadcasting the data broadcasting program, and

(b) allot (1) a broadcasting bandwidth to the data broadcasting data program
10 in the total time period except for the first time period and the second time period (2) a part of the broadcasting bandwidth to the first specific program for a time period preceding to the first time period in the total time period, so that the part of the broadcasting bandwidth allotted to the first specific program for the time period preceding to the first time period is narrower than the broadcasting bandwidth allotted to the data broadcasting program for the time period preceding
15 to the first time period, the time period preceding to the first time period being longer than a time period that is necessary for transmitting a program data of the first specific program more than once during the part of the broadcasting bandwidth allotted to the first specific program for the

time period preceding to the first time period, and (3) a part of the broadcasting bandwidth to the second specific program for a time period preceding to the second time period in the total time period, so that the part of the broadcasting bandwidth allotted to the second specific program for the time period preceding to the second time period is narrower than the broadcasting bandwidth allotted to the data broadcasting program for the time period preceding to the second time period, the time period preceding to the second time period being longer than a time period that is necessary for transmitting a program data of the second specific program more than once during the part of the broadcasting bandwidth allotted to the second specific program for the time period preceding to the second time period;

script instruction unit operable to (i) generate (a) when a receiving apparatus receives a first event message for instructing storage, a script for storing program data of the first specific program in a storage unit of the receiving apparatus and (b) when the receiving apparatus receives a second event message for instructing storage, a script for storing program data of the second specific program in the storage unit and (ii) generate (a) when receiving a first event message for instructing reproduction, a script instructing the receiving apparatus to reproduce the program data of the first specific program in a case that the program data of the specific program has been stored in the storage unit and (b) when receiving a second event message for instructing reproduction, a script instructing the receiving apparatus to reproduce the program data of the second specific program in a case that the program data of the second specific program has been stored in the storage unit, each script being automatically stored when the receiving apparatus receives the script;

an event message generation unit operable to generate a plurality of event messages for instructing storage and a plurality of event messages for instructing reproduction;

transmission unit operable to transmit a normal program that includes a video stream and an audio stream and

- (a) repeatedly transmit during the total time period, and
- (b) in accordance with the result of allotment by the allotment unit,

45 (i) transmit repeatedly the program data of the data broadcasting program during all of time periods other than the first and the second time periods in the total time period,

(ii) repeatedly multiplex the program data of the first specific program during the first time period and the time period preceding to the first time period, and

50 (iii) repeatedly multiplex the program data of the second specific program during the second time period and the time period preceding to the second time period; and

unit operable to control the transmission unit so as to transmit (i) a plurality of the first event messages for instructing storage before the first time period (ii) a plurality of the
55 second event messages for instructing storage before the second time period (iii) the first event message for instructing reproduction at the starting time of the first time period, and (iv) the second event message for instructing reproduction at the starting time of the second time period,

wherein in accordance with the result of allotment by the allotment unit, repeatedly multiplex program data of the first and second specific program with the normal
60 program based on a data carousel transmission method and transmit a first multiplexed result while multiplexing the program data of the first and second specific programs and the script with the normal program and transmitting a second multiplexed result in the preceding time period, and repeatedly multiplex the program data of the specific first and second programs and the

script with the normal program and transmit the second multiplexed result in the reproduction
65 time period,

the first specific program and the second specific program respectively have the
program data that relates to a first commercial program and a second commercial program which
are inserted in the normal program, and

the first time period and the second time period respectively are the same as
70 broadcast time periods of the first commercial program and the second commercial program.

13. (Cancelled)

14. (Previously Presented) The broadcasting apparatus of Claim 12, further
comprising:

storage unit operable to store as the program data of the first specific program (a)
75 first contents data that makes up the first specific program and (b) second contents data that is
different from the first contents data in part,

wherein the transmission unit transmits the first contents data in a time period
preceding to the first time period in the total time period, and transmits the second contents data
in the first time period.

15. (Currently Amended) A broadcasting method for broadcasting a specific program
to which a reproduction time period between a starting time and a finishing time is specified, the
reproduction being performed by a receiving apparatus, the broadcasting method comprising the
steps of:

5 an allotment step for allotting a broadcasting bandwidth for the reproduction time
period to the specific program and allotting a part of the broadcasting bandwidth for a preceding
time period immediately before the reproduction time period to the specific program and the

other part of the broadcasting bandwidth to another program, so that the part of the broadcasting bandwidth for the preceding time period allotted to the specific program is narrower than the
10 other part of the broadcasting bandwidth allotted to another program, the preceding time period being longer than a time period that is necessary for transmitting a program data of the specific program more than once during the part of the broadcasting bandwidth for the preceding time period allotted to the specific program;

a script generation step for generating (a) when the receiving apparatus receives a
15 an event message for instructing storage, a script for storing program data of the specific program in a storage unit of the receiving apparatus, and (b) when the receiving apparatus receives an event message for instructing reproduction, a script for the receiving apparatus to reproduce the program data of the specific program in a case where the program data of the specific program has been stored in the storage unit;

20 an event message generation step for generating a plurality of event messages for instructing storage and an event message for instructing reproduction;

a transmission step for transmitting a normal program that includes a video stream and an audio stream, and further in accordance with the result of allotment in the allotment step, repeatedly multiplex program data of the other program with the normal program based on a data
25 carousel transmission method and transmit a first multiplexed result while multiplexing the program data of the specific program and the script with the normal program and transmitting a second multiplexed result in the preceding time period, and repeatedly multiplex the program data of the specific program and the script with the normal program and transmit the second multiplexed result in the reproduction time period; and

30 a control step operable for controlling a transmission unit to transmit the plurality
of event messages for instructing storage in the preceding time period and to transmit the event
message for instructing reproduction at the starting time,

 wherein the specific program has the program data that relates to a commercial
message which is inserted in the normal program, and

35 the reproduction time period of the specific program is the same as a broadcast
time period of the commercial message.

16. (Currently Amended) A broadcasting method for broadcasting a data
broadcasting program and a first specific program and a second specific program which are
inserted in the data broadcasting program, a total time period between a starting time and a
finishing time for broadcasting the data broadcasting program including a first time period
5 during which the first specific program is broadcast and a second time period during which the
second specific program is broadcast, the broadcasting method comprising the steps of:

 an allotment step for

 (a) allotting a part of the broadcasting bandwidth to the first and the second
specific programs and the other part of the broadcasting bandwidth to the data broadcasting
10 program for all of time periods other than the first and the second time periods in the total time
period, so that the part of the broadcasting bandwidth allotted to the first and the second specific
programs for all time periods other than the first and the second time periods is narrower than the
other part of the broadcasting bandwidth allotted to the data broadcasting program for all time
periods other than the first and the second time periods, all of the time periods other than the first
15 and the second time periods being longer than the time period necessary for transmitting a
program data of the first specific program and a program data of the second specific program

more than once during the part of the broadcasting bandwidth allotted to the first and the second specific programs for all time periods other than the first and the second time periods, and

(b) allotting a part of the broadcasting bandwidth to the first specific program
20 and the other part of the broadcasting bandwidth to the second specific program for the first and the second time periods;

a script instruction generation step for (i) generating (a) when a receiving
apparatus receives a first event message for instructing storage, a script for storing program data
of the first specific program in a storage unit of the receiving apparatus and (b) when receiving a
25 second event message for instructing storage, a script for storing program data of the second
specific program in the storage unit, and (ii) generating (a) when receiving a first event message
for instructing reproduction, a script for the receiving apparatus to reproduce the program data of
the first specific program in a case that the program data of the specific program has been stored
in the storage unit and (b) when receiving a second event message for instructing reproduction, a
30 script for the receiving apparatus to reproduce the program data of the second specific program
in a case that the program data of the second specific program has been stored in the storage unit,
each script being automatically stored when the receiving apparatus receives the scripts;

an event message generation step for generating a plurality of event messages for
instructing storage and a plurality of event messages for instruction reproduction; and
35 a transmission step for transmitting a normal program that includes a video stream
and an audio stream, and

(a) repeatedly transmitting the scripts during the total time period,
transmitting the first event messages for instructing storage before the first time period (ii) the
first event message for instruction reproduction at the starting time of the first time period (iii)
40 the second event messages for instructing storage before the second time period, and (iv) the

second event message for instruction reproduction at the starting time of the second time period,
and

(b) in accordance with the result of allotment by the allotment step,

(i) repeatedly multiplex the program data of the data broadcasting
45 program during all of time periods other than the first and second time periods in the total time
period, and with the normal program based on a data carousel transmission

(ii) repeatedly multiplex the program data of each of the first and the
second specific programs during the total time period with the normal program;

wherein, the first and the second specific programs have the program data that
50 relates to first and second commercial messages, respectively, which are inserted in the normal
program, and

the reproduction time period of the specific program is the same as a broadcast
time period of the commercial message.

17. (Currently Amended) A broadcasting method for broadcasting a data
broadcasting program and a first specific program and a second specific program which are
inserted in the data broadcasting program, the broadcasting method comprising the steps of:

an allotment step for (a) allotting a broadcasting bandwidth for a first time period
5 and a second time period to the first specific program and the second specific program, the first
time period and the second time period are included in a total time period between a starting time
and a finishing time for broadcasting the data broadcasting program, and (b) allotting (1) a
broadcasting bandwidth to the data broadcasting data program in the total time period except for
the first time period and the second time period (2) a part of the broadcasting bandwidth to the
10 first specific program for a time period preceding to the first time period in the total time period,

so that the part of the broadcasting bandwidth allotted to the first specific program for the time period preceding to the first time period is narrower than the broadcasting bandwidth allotted to the data broadcasting program for the time period preceding to the first time period, the time period preceding to the first time period being longer than a time period that is necessary for transmitting a program data of the first specific program more than once during the part of the broadcasting bandwidth allotted to the first specific program for the time period preceding to the first time period, and (3) a part of the broadcasting bandwidth to the second specific program for a time period preceding to the second time period in the total time period, so that the part of the broadcasting bandwidth allotted to the second specific program for the time period preceding to the second time period is narrower than the broadcasting bandwidth allotted to the data broadcasting program for the time period preceding to the second time period, the time period preceding to the second time period being longer than a time period that is necessary for transmitting a program data of the second specific program more than once during the part of the broadcasting bandwidth allotted to the second specific program for the time period preceding to the second time period;

a script instruction generation step for (i) generating (a) when receiving a first event message for instructing storage, a script for storing program data of the first specific program in a storage unit of a receiving apparatus and (b) when receiving a second event message for instructing storage, a script for storing program data of the second specific program in the storage unit, and (ii) generating (a) when receiving a first event message for instructing reproduction, a script instructing the receiving apparatus to reproduce the program data of the first specific program in a case that the program data of the specific program has been stored in the storage unit and (b) when receiving a second event message for instructing reproduction, a script instructing the receiving apparatus to reproduce the program data of the second specific

35 program in a case that the program data of the second specific program has been stored in the storage unit, each script being automatically stored when the receiving apparatus receives the scripts;

an event message generation step for generating a plurality of first event messages for instructing storage, a plurality of second event messages for instructing storage, a first event
40 message for instructing reproduction and a second event message for instructing reproduction;
and

a transmission step for transmitting a normal program that includes a video stream and an audio stream and further in accordance with the allotment step

repeatedly transmitting (i) the first event messages for instructing storage before
45 the first time period (ii) the second event messages for instructing storage before the second time period (iii) the first event message for instructing reproduction at the starting time of the first time period, and (iv) the second event message for instructing reproduction at the starting time of the second time period, during the total time period, and

(b) in accordance with the result of allotment by the allotment unit,

50 (i) repeatedly multiplexing the program data of the data broadcasting program during all of time periods other than the first and the second time periods in the total time period,

(ii) repeatedly multiplexing the program data of the first specific program during the first time period and the time period preceding to the first time period, and

55 (iii) repeatedly multiplexing the program data of the second specific program during the second time period and the time period preceding to the second time period;
and

wherein, in accordance with the result of allotment by the allotment unit,
repeatedly multiplex program data of the first and second specific program with the normal
60 program based on a data carousel transmission method and transmit a first multiplexed result
while multiplexing the program data of the first and second specific programs and the script with
the normal program and transmitting a second multiplexed result in the preceding time period,
and repeatedly multiplex the program data of the specific first and second programs and the
script with the normal program and transmit the second multiplexed result in the reproduction
65 time period,

the first and the second specific programs have the program data that relates to
first and second commercial messages, respectively, which are inserted in the normal program,
and

the reproduction time period of the specific program is the same as a broadcast
70 time period of the commercial message.

18. (Currently Amended) A program recording medium which is readable for a
computer in a broadcasting apparatus, the broadcasting apparatus broadcasts a specific program
to which a reproduction time period between a starting time and finishing time is specified, the
reproduction being performed by a receiving apparatus, a computer program embodied on the
5 program recording medium has the computer conduct the steps of:

an allotment step for allotting a broadcasting bandwidth for the reproduction time
period to the specific program and allotting a part of the broadcasting bandwidth for a preceding
time period immediately before the reproduction time period to the specific program and the
other part of the broadcasting bandwidth to other program, so that the part of the broadcasting
10 bandwidth for the preceding time period allotted to the specific program is narrower than the

other part of the broadcasting bandwidth allotted to another program, the preceding time period being longer than a time period that is necessary for transmitting a program data of the specific program more than once during the part of the broadcasting bandwidth for the preceding time period allotted to the specific program;

15 a script generation step for generating (a) when the receiving apparatus receives an event message for instructing storage, a script for storing program data of the specific program in a storage unit of the receiving apparatus, and (b) when the receiving apparatus receives an event message for instructing reproduction, a script for the receiving apparatus to reproduce the program data of the specific program in a case where the program data of the
20 specific program has been stored in the storage unit, each script being automatically stored when the receiving apparatus receives the scripts;

 a message generation step for generating a plurality of event message for instructing storage and an event message for instructing reproduction; and

 in accordance with the result of allotment by the allotment unit, repeatedly
25 multiplex program data of the first and second specific program with the normal program based on a data carousel transmission method and transmit a first multiplexed result while multiplexing the program data of the first and second specific programs and the script with the normal program and transmitting a second multiplexed result in the preceding time period, and repeatedly multiplex the program data of the specific first and second programs and the script
30 with the normal program and transmit the second multiplexed result in the reproduction time period,

 a control step for controlling the transmission unit to transmit the event messages for instructing storage in the preceding time period and to transmit the event message for instructing reproduction at the starting time,

35 wherein, the specific program has the program data that relates to a commercial message which is inserted in the normal program, and

 the reproduction time period of the specific program is the same as a broadcast time period of the commercial message.

19. (Currently Amended) A program recording medium which is readable for a computer in a broadcasting apparatus, the broadcasting apparatus transmits a data broadcasting program and a first and a second specific programs which are inserted in the data broadcasting program, a total time period between a starting time and a finishing time for broadcasting the
5 data broadcasting program including a first time period during which the first specific program is broadcast and a second time period during which the second specific program is broadcast, a computer program embodied on the program recording medium has the computer conduct the steps of:

 an allotment step for

10 (a) allotting a part of the broadcasting bandwidth to the first and the second specific programs and the other part of the broadcasting bandwidth to the data broadcasting program for all of time periods other than the first and the second time periods in the total time period, so that the part of the broadcasting bandwidth allotted to the first and the second specific programs for all time periods other than the first and the second time periods is narrower than the
15 other part of the broadcasting bandwidth allotted to the data broadcasting program for all time periods other than the first and the second time periods, all of the time periods other than the first and the second time periods being longer than the time period necessary for transmitting a program data of the first specific program and a program data of the second specific program

more than once during the part of the broadcasting bandwidth allotted to the first and the second

20 specific programs for all time periods other than the first and the second time periods, and

(b) allotting a part of the broadcasting bandwidth to the first specific program and the other part of the broadcasting bandwidth to the second specific program for the first and second time periods;

a script instruction generation step for (i) generating, when a receiving apparatus
25 receives a first event message for instructing storage, a script for storing program data of the first specific program in a storage unit of the receiving apparatus and (b) when receiving a second event message for instructing storage, a script for storing program data of the second specific program in the storage unit, and (ii) generating (a) when receiving a first event message for instructing reproduction, a script instructing the receiving apparatus to reproduce the program
30 data of the first specific program in a case that the program data of the first specific program has been stored in the storage unit and (b) when receiving a second event message for instructing reproduction, script instructing the receiving apparatus to reproduce the program of the second specific program in a case that the program data of the second specific program has been stored in the storage unit, each script being automatically stored when the receiving apparatus receives
35 the scripts;

an event message generation step for generating a plurality of first event messages for instructing storage, a plurality of second event messages for instructing storage, a first event message for instructing reproduction and a second event message for instructing reproduction;
and

40 a transmission step for transmitting a normal program that includes a video stream and an audio stream, and

repeatedly transmitting the scripts during the total time period, transmitting (i) the first event messages for instructing storage before the first time period, the first event message for instructing reproduction at the starting time of the first time period (iii) the second event
45 messages for instructing storage before the second time period, and (iv) the second event message for instructing reproduction at the starting time of the second time period,

(b) in accordance with the result of allotment by the allotment step,

(i) repeatedly multiplex the program data of the data broadcasting program with the normal program based on a data carousel transmission method during all of
50 time periods other than the first and the second time periods in the total time period, and

(ii) repeatedly multiplex the program data of each of the first and the second specific program during the total time period;

wherein, the first and the second specific programs have the program data that relates to first and second commercial messages, respectively, which are inserted in the normal
55 program, and

the reproduction time period of the specific program is the same as a broadcast time period of the commercial message.

20. (Currently Amended) A program recording medium which is readable for a computer in a broadcasting apparatus, the broadcasting apparatus transmits a data broadcasting program and a first and a second specific programs which are inserted in the data broadcasting program, a computer program embodied on the program recording medium has the computer
5 conduct the steps of:

an allotment step for (a) allotting a broadcasting bandwidth for a first time period and a second time period to the first specific program and the second specific program, the first

time period and the second time period are included in a total time period between a starting time and a finishing time for broadcasting the data broadcasting program, and (b) allotting (1) a
10 broadcasting bandwidth to the data broadcasting data program in the total time period except for the first time period and the second-time period (2) a part of the broadcasting bandwidth to the first specific program for a time period preceding to the first time period in the total time period, so that the part of the broadcasting bandwidth allotted to the first specific program for the time period preceding to the first time period is narrower than the broadcasting bandwidth allotted to
15 the data broadcasting program for the time period preceding to the first time period, the time period preceding to the first time period being longer than a time period that is necessary for transmitting a program data of the first specific program more than once during the part of the broadcasting bandwidth allotted to the first specific program for the time period preceding to the first time period, and (3) a part of the broadcasting bandwidth to the second specific program for
20 a time period preceding to the second time period in the total time period, so that the part of the broadcasting bandwidth allotted to the second specific program for the time period preceding to the second time period is narrower than the broadcasting bandwidth allotted to the data broadcasting program for the time period preceding to the second time period, the time period preceding to the second time period being longer than a time period that is necessary for
25 transmitting a program data of the second specific program more than once during the part of the broadcasting bandwidth allotted to the second specific program for the time period preceding to the second time period;

a script instruction generation step for (i) generating (a) when a receiving apparatus receives a first event message for instructing storage, a script for storing program data
30 of the first specific program in a storage unit of the receiving apparatus and (b) when receiving a second event message for instructing storage, a script for storing program data of the second

specific program in the storage unit and (ii) generating (a) when receiving a first event message for instructing reproduction, a script instructing the receiving apparatus to reproduce the program data of the first specific program in a case that the program data of the specific program has been
35 stored in the storage unit and (b) when receiving a second event message for instructing reproduction, a script instructing the receiving apparatus to reproduce the program data of the second specific program in a case that the program data of the second specific program has been stored in the storage unit, each script being automatically stored when the receiving apparatus receives the scripts;

40 an event message generation step for generating a plurality of first event messages for instructing storage, a plurality of second event messages for instructing storage, a first event message^{*} for instructing reproduction and a second event message for instructing reproduction; and

a transmission step for transmitting a normal program that includes a video stream
45 and an audio stream, and

repeatedly transmitting (i) the first storage instructions before the first time period (ii) the second storage instructions before the second time period (iii) the first reproduction instruction at the starting time of the first time period, and (iv) the second reproduction instruction at the starting time of the second time period, and

50 (b) in accordance with the result of allotment by the allotment step
(i) repeatedly multiplex the program data of the data broadcasting program during all of time periods other than the first and the second time periods in the total time period, and

(ii) repeatedly multiplex the program data of each of the first specific
55 program during the first time period and the time period preceding to the first time ~~timer~~ period;
and

(iii) repeatedly multiplex the program data of the second specific
program during the second time period and the time period preceding to the second time period;

wherein, in accordance with the result of allotment by the allotment step,
60 repeatedly multiplex program data of the first and second specific program with the normal
program based on a data carousel transmission method and transmit a first multiplexed result
while multiplexing the program data of the first and second specific programs and the script with
the normal program and transmitting a second multiplexed result in the preceding time period,
and repeatedly multiplex the program data of the specific first and second programs and the
65 script with the normal program and transmit the second multiplexed result in the reproduction
time period,

the first and the second specific programs have the program data that relates to
first and second commercial messages, respectively, which are inserted in the normal program,
and

70 the reproduction time period of the specific program is the same as a broadcast
time period of the commercial message.

21. (Currently Amended) A program that is readable for a computer in a
broadcasting apparatus, the broadcasting apparatus broadcasts a specific program to which a
reproduction time period between a starting time and finishing time is specified, the reproduction
being performed by a receiving apparatus, the program has the computer conduct the steps of:

5 an allotment step for allotting a broadcasting bandwidth for the reproduction time period to the specific program and allotting a part of the broadcasting bandwidth for a preceding time period immediately before the reproduction time period to the specific program and the other part of the broadcasting bandwidth to another program, so that the part of the broadcasting bandwidth for the preceding time period allotted to the specific program is narrower than the
10 other part of the broadcasting bandwidth allotted to another program, the preceding time period being longer than a time period that is necessary for transmitting a program data of the specific program more than once during the part of the broadcasting bandwidth for the preceding time period allotted to the specific program;

 a script generation step for generating (a) when receiving apparatus receives an
15 event message for instructing storage, a script for storing program data of the specific program in a storage unit of the receiving apparatus, and (b) when the receiving apparatus receives an event message for instructing reproduction, a script for the receiving apparatus to reproduce the program data of the specific program in a case where the program data of the specific program has been stored in the storage unit, each script being automatically stored when the receiving
20 apparatus receives the scripts;

 an event message generation step for generating a plurality of event messages for instructing storage and an event message for instructing reproduction;

 a transmission step for transmitting a normal program that includes a video stream and an audio stream, and further in accordance with the result of allotment in the allotment step,
25 repeatedly multiplex program data of the other program with the normal program based on a data carousel transmission method and transmit a first multiplexed result while multiplexing the program data of the specific program and the script with the normal program and transmitting a second multiplexed result in the preceding time period, and repeatedly multiplex the program

data of the specific program and the script with the normal program and transmit the second
30 multiplexed result in the reproduction time period; and

a control step operable for controlling a transmission unit to transmit the event
messages for instructing storage in the preceding time period and to transmit the event message
for instructing reproduction at the starting time,

wherein the specific program has the program data that relates to a commercial
35 message which is inserted in the normal program, and

the reproduction time period of the specific program is the same as a broadcast
time period of the commercial message.

22. (Currently Amended) A program that is readable for a computer in a
broadcasting apparatus, the broadcasting apparatus transmits a data broadcasting program, and a
first and a second specific programs which are inserted in the data broadcasting program, a total
time period between a starting time and a finishing time for broadcasting the data broadcasting
5 program including a first time period during which the first specific program is broadcast and a
second time period during which the second specific program is broadcast the program has the
computer conduct the steps of:

an allotment step for

(a) allotting a part of the broadcasting bandwidth to the first and the second
10 specific programs and the other part of the broadcasting bandwidth to the data broadcasting
program for all of time periods other than the first and the second time periods in the total time
period, so that the part of the broadcasting bandwidth allotted to the first and the second specific
programs for all time periods other than the first and the second time periods is narrower than the
other part of the broadcasting bandwidth allotted to the data broadcasting program for all time

15 periods other than the first and the second time periods, all of the time periods other than the first
and the second time periods being longer than the time period necessary for transmitting a
program data of the first specific program and a program data of the second specific program
more than once during the part of the broadcasting bandwidth allotted to the first and the second
specific programs for all time periods other than the first and the second time periods, and

20 (b) allotting a part of the broadcasting bandwidth to the first specific program
and the other part of the broadcasting bandwidth to the second specific program for the first and
the second time periods;

a script instruction generation step for (i) generating (a) when a receiving
apparatus receives a first event message for instructing storage, a script for storing program data
25 of the first specific program in a storage unit of the receiving apparatus and (b) when receiving a
second event message for instructing storage, a script for storing program data of the second
specific program in the storage unit, and (ii) generating (a) when receiving a first event message
for instructing reproduction, a script for the receiving apparatus to reproduce the program data of
the first specific program in a case that the program data of the specific program has been stored
30 in the storage unit and (b) when receiving a second event message for instructing reproduction, a
script for the receiving apparatus to reproduce the program data of the second specific program
in a case that the program data of the second specific program has been stored in the storage unit,
each script being automatically stored when the receiving apparatus receives the scripts;

an event message generation step for generating a plurality of first event messages
35 for instructing storage, a plurality of second event messages for instructing storage, a first event
message for instructing reproduction and a second event message for instructing reproduction;
and

a transmission step for transmitting a normal program that includes a video stream and an audio stream, and

40 (a) repeatedly transmitting the scripts during the total time period, transmitting the first event messages for instructing storage before the first time period (ii) the first event message for instructing reproduction at the starting time of the first time period (iii) the second event messages for instructing storage before the second time period, and (iv) the second event message for instructing reproduction at the starting time of the second time period,
45 and

 (b) in accordance with the result of allotment by the allotment step,

 (i) repeatedly multiplex the program data of the data broadcasting program during all of time periods other than the first and second time periods in the total time period, and with the normal program based on a data carousel transmission

50 (ii) repeatedly multiplex the program data of each of the first and the second specific programs during the total time period with the normal program;

 wherein, the first and the second specific programs have the program data that relates to first and second commercial messages, respectively, which are inserted in the normal program, and

55 the reproduction time period of the specific program is the same as a broadcast time period of the commercial message.

23. (Currently Amended) A program that is readable for a computer in a broadcasting apparatus, the broadcasting apparatus transmits a data broadcasting program and a first and a second specific programs which are inserted in the data broadcasting program, the program has the computer conduct the steps of:

5 an allotment step for (a) allotting a broadcasting bandwidth for a first time period
and a second time period to the first specific program and the second specific program, the first
time period and the second time period are included in a total time period between a starting time
and a finishing time for broadcasting the data broadcasting program, and (b) allotting (1) a
broadcasting bandwidth to the data broadcasting data program in the total time period except for
10 the first time period and the second time period (2) a part of the broadcasting bandwidth to the
first specific program for a time period preceding to the first time period in the total time period,
so that the part of the broadcasting bandwidth allotted to the first specific program for the time
period preceding to the first time period is narrower than the broadcasting bandwidth allotted to
the data broadcasting program for the time period preceding to the first time period, the time
15 period preceding to the first time period being longer than a time period that is necessary for
transmitting a program data of the first specific program more than once during the part of the
broadcasting bandwidth allotted to the first specific program for the time period preceding to the
first time period, and (3) a part of the broadcasting bandwidth to the second specific program for
a time period preceding to the second time period in the total time period, so that the part of the
20 broadcasting bandwidth allotted to the second specific program for the time period preceding to
the second time period is narrower than the broadcasting bandwidth allotted to the data
broadcasting program for the time period preceding to the second time period, the time period
preceding to the second time period being longer than a time period that is necessary for
transmitting a program data of the second specific program more than once during the part of the
25 broadcasting bandwidth allotted to the second specific program for the time period preceding to
the second time period;

 a script instruction generation step for (i) generating (a) when receiving a first
event message for instructing storage, a script for storing program data of the first specific

program in a storage unit of a receiving apparatus and (b) when receiving a second event
30 message for instructing storage, a script for storing program data of the second specific program
in the storage unit, and (ii) generating (a) when receiving a first event message for instructing
reproduction, a script instructing the receiving apparatus to reproduce the program data of the
first specific program in a case that the program data of the specific program has been stored in
the storage unit and (b) when receiving a second event message for instructing reproduction, a
35 script instructing the receiving apparatus to reproduce the program data of the second specific
program in a case that the program data of the second specific program has been stored in the
storage unit, each script being automatically stored when the receiving apparatus receives the
scripts;

a message generation step for generating a plurality of first storage instructions, a
40 plurality of second storage instructions, a first reproduction instruction and a second
reproduction instruction; and

a transmission step for transmitting a normal program that includes a video stream
and an audio stream and further in accordance with the allotment step

repeatedly transmitting (i) the first event messages for instructing storage before
45 the first time period (ii) the second event messages for instructing storage before the second time
period (iii) the first event message for instructing reproduction at the starting time of the first
time period, and (iv) the second event message for instructing reproduction at the starting time of
the second time period, during the total time period, and

(b) in accordance with the result of allotment by the allotment unit,

50 (i) repeatedly multiplexing the program data of the data broadcasting
program during all of time periods other than the first and the second time periods in the total
time period,

(ii) repeatedly multiplexing the program data of the first specific program during the first time period and the time period preceding to the first time period, and

55 (iii) repeatedly multiplexing the program data of the second specific program during the second time period and the time period preceding to the second time period; and

wherein, in accordance with the result of allotment by the allotment unit, repeatedly multiplex program data of the first and second specific program with the normal
60 program based on a data carousel transmission method and transmit a first multiplexed result while multiplexing the program data of the first and second specific programs and the script with the normal program and transmitting a second multiplexed result in the preceding time period, and repeatedly multiplex the program data of the specific first and second programs and the script with the normal program and transmit the second multiplexed result in the reproduction
65 time period,

the first and the second specific programs have the program data that relates to first and second commercial messages, respectively, which are inserted in the normal program, and

the reproduction time period of the specific program is the same as a broadcast
70 time period of the commercial message.

24. (Currently Amended) A broadcasting method for reducing television receiver latencies in displaying an interactive content portion of broadcast television commercials, the method comprising the steps of:

assigning a television program to a first time slot and a commercial to a second
5 time slot immediately after the first time slot;

allocating a first portion of the available bandwidth of the first time slot to audiovisual content of the television program;

allocating a second portion of the available bandwidth of the first time slot to a specific program having interactive content for a commercial, so that the second portion of the available bandwidth of the first time slot is narrower than the first portion of the available bandwidth of the first time slot, the first time slot being longer than a time period necessary for transmitting a program data of the specific program having interactive content for the commercial more than once during the second portion of the available bandwidth of the first time slot;

allocating a first portion of the available bandwidth of the second time slot to the specific program;

allocating a second portion of the available bandwidth of the second time slot to audiovisual content of the commercial;

transmitting the audiovisual content of the television program during the first time slot;

repeatedly transmitting in a carousel format the specific program during the first time slot;

transmitting the audiovisual content of the commercial during the second time slot;

repeatedly transmitting in a carousel format the specific program during the second time slot,

transmitting a script for storing the specific program,

transmitting a script for executing the specific program, and

receiving and storing the specific program at the television receiver.

25.-28. (Cancelled)

29. (Currently Amended) A broadcasting apparatus that broadcasts a specific program to which a reproduction time period between a starting time and a finishing time is specified, the reproduction being performed by a receiving apparatus, the broadcasting apparatus comprising:

5 allotment unit operable to allot a broadcasting bandwidth for the reproduction time period to the specific program and allotting a part of the broadcasting bandwidth for a preceding time period immediately before the reproduction time period to the specific program and the other part of the broadcasting bandwidth to another program;

script generation unit operable to generate (a) when the receiving apparatus
10 receives an event message for instructing storage, a script for storing program data of the specific program in a storage unit of the receiving apparatus, and (b) when the receiving apparatus receives an event message for instructing reproduction, a script for the receiving apparatus to reproduce the program data of the specific program in a case where the program data of the specific program has been stored in the storage unit, each script being automatically stored when
15 the receiving apparatus receives the script;

event message generation unit operable to generate the event message for instructing storage and the event message for instructing reproduction;

transmission unit operable to transmit a normal program that includes a video stream and an audio stream, and further in accordance with the result of allotment by the
20 allotment unit, repeatedly multiplex program data of the other program with the normal program based on a data carousel transmission method and transmit a first multiplexed result while multiplexing the program data of the specific program and the script with the normal program

and transmitting a second multiplexed result in the preceding time period, and repeatedly
multiplex the program data of the specific program and the script with the normal program and
25 transmit the second multiplexed result in the reproduction time period, and repeatedly transmit,
as an event message independent of the specific program, each script generated by the script
generation unit; and

control unit operable to control the transmission unit to transmit the event
message for instructing storage generated by the event message generation unit in the preceding
30 time period and to transmit the event message for instructing reproduction generated by the event
message generation unit at the starting time,

wherein the specific program has the program data that relates to a commercial
message which is inserted in the normal program, and

the reproduction time period of the specific program is the same as a broadcast
35 time period of the commercial message.